

## REMARKS

### **I. Introduction**

Claims 7 to 18 are pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Reconsideration is respectfully requested.

### **II. Rejection of Claims 7 to 11 and 17 Under 35 U.S.C. § 103(a)**

Claims 7 to 11 and 17 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Japanese Patent Document No. 2002/280237 (“Masahiro”) and U.S. Patent No. 5,703,462 (“Woody”). For at least the following reasons, Applicants respectfully submit that the combination of Masahiro and Woody does not render unpatentable these claims.

Claim 7 relates to an ignition coil of an ignition system in an internal combustion engine, including, in relevant part, at least one electrically conductive component having, at least in some areas, an arrangement for an electrically effective evening out of its surface, wherein the arrangement adjoins the housing by a smooth surface. Claim 7 has been amended to recite that the magnetically active core adjoins the same arrangement. Support for this amendment may be found, for example, on page 5, line 30 to page 6, line 2 of the Specification.

The Final Office Action refers to the center core 110 and the wrap tube 111 of Masahiro as disclosing the electrically conductive component and the arrangement for an electrically effective evening out of its surface, respectively. Further, the Office Action states that reference numeral 150 of Masahiro is the housing.

As is apparent from Figs. 1 and 2a of Masahiro, the *arrangement* (i.e. wrap tube 111) of Masahiro does not adjoin the housing 150. According to Masahiro, the *arrangement* is surrounded by secondary spool 131, not housing 150. Thus, nowhere does Masahiro disclose, or even suggest, an arrangement adjoining a housing, let alone an *arrangement that adjoins the housing by a smooth surface*.

In the Response to Arguments section, the Examiner contends that since Masahiro discloses the arrangement 111 covering the inner core 110, “[i]t would have been obvious to one having ordinary skill in the art at the time of the invention to use the same material to cover the electrically conductive component 140 and adjoins the housing 150 by a smooth surface.” The Examiner, on page 3, cites paragraphs 10 and 65 of Masahiro, as

allegedly showing that “[t]he motivation would have been to control the corona discharge between core and winding.” Although these contentions are not agreed with, claim 11 has been amended to better clarify the location of the arrangement, and to recite that *the magnetically active core adjoins the same arrangement*. Nowhere, does Masahiro disclose, or even suggest, this feature.

That is, the electrically conductive component 140 (which the Examiner alleges discloses the feature that the arrangement adjoins the housing by a smooth surface) and the *arrangement*, i.e. wrap tube 111 of Masahiro are two separate arrangements, with the wrap tube 111 adjoining the magnetically active core, and the electrically conductive component 140 adjoining the housing. This is in contrast to the present claim which recites that *the magnetically active core adjoins the same arrangement, i.e. the same arrangement as the housing*.

As such, Masahiro does not disclose, or even suggest, an arrangement for an electrically effective evening out of its surface, wherein the arrangement adjoins the housing by a smooth surface, and wherein the magnetically active core adjoins the same arrangement. Woody does not cure the critical deficiencies of Masahiro. Therefore, the combination of Masahiro and Woody does not render unpatentable independent claim 7, or dependent claims 8 to 11 and 17.

Withdrawal of the present rejection is therefore respectfully requested.

### **III. Rejection of Claim 12 Under 35 U.S.C. § 103(a)**

Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Masahiro, Woody and U.S. Patent Application Publication No. 2004/0108931 (“Takeyama”). For at least the following reasons, Applicants respectfully submit that the combination of Masahiro, Woody and Takeyama does not render unpatentable claim 12.

Claim 12 depends from claim 7 and therefore includes all of the features of claim 7. As more fully set forth above with respect to claim 7, the combination of Masahiro and Woody does not disclose or suggest all of the features of claim 7. Takeyama does not cure the critical deficiencies of the Masahiro and Woody references. Therefore, the combination of Masahiro, Woody and Takeyama does not render unpatentable claim 12, which depends from claim 7.

Withdrawal of the present rejection is respectfully requested.

#### **IV. Rejection of Claims 13 to 16 and 18 Under 35 U.S.C. § 103(a)**

Claims 13 to 16 and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Masahiro. For at least the following reasons, Applicants respectfully submit that Masahiro does not render unpatentable claims 13 to 16.

Claim 13 relates to an ignition coil of an ignition system in an internal combustion engine, including, in relevant part, the feature that the plastic covering is sprayed onto the inner core and the outer core as a coating. Nowhere, does Masahiro disclose, or even suggest, this feature.

In the Response to Arguments section, the Examiner contends that the limitation “sprayed onto the inner core” renders the claim a product-by-process claim. It is respectfully submitted that the feature of *the plastic covering is sprayed onto the inner core and the outer core as a coating* is a structural limitation which result in a product wholly different than that indicated by Masahiro.

That is, Masahiro describes the wrap tube 111 and the resin layer 154 as tubular, sleeve-like features. The Examiner refers to page 2, paragraphs 7 to 11, and 14, and Figs. 2, 4, and 5b of Masahiro as allegedly disclosing that the plastic covering is sprayed onto the inner core and the outer core as a coating. However, nowhere in the paragraphs and figures referred to by the Examiner, or anywhere else in Masahiro, is the plastic covering of the present claim - which is featured as a coating - disclosed. Figure 1 of Masahiro clearly shows that sheathing 111 is a separate part that is slipped over core 110, since openings or hollow spaces are formed between sheathing 111 and core 110. If sheathing 111 was a plastic covering sprayed as a coating, no openings or hollow spaces would exist. This is in contrast to the present claim which is a sheathing made of an electrically conductive material and in that it is a plastic covering sprayed as a coating.

The coating of the present application more completely conforms to the edges of the underlying inner and outer cores and has the technical effect of achieving particularly thin wall thicknesses of the sheathing, for example, approximately 0.5 mm, and can provide protection against the same problems as Masahiro, but with smaller space and manufacturing requirements, and greater flexibility for use with various geometries. Further, the coating is better suited to prevent electrical breakdown, since the contact between the coating and the core is more intimate. In addition, the present device is particularly easy to produce.

Further, the present claim has an outer and inner core, whereas Masahiro has only one single core.

Furthermore, sheathing 111 of Masahiro is designed to be much thicker and also must be produced in a separate tool and subsequently mounted on the core by slipping it over in a costly manner.

As such, it is respectfully submitted that Masahiro does not disclose, or even suggest, all of the features included in claim 13 for at least the same reasons set forth above in support of the patentability of claim 7. Consequently, it is respectfully submitted that Masahiro does not render unpatentable claim 13, or claims 14 to 16 and 18, which depend from claim 13.

Withdrawal of the present rejection is respectfully requested.

## V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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